

MAY 02 2006

REPORT DOCUMENTATION PAGE			Form Approved OMB No. 0704-0188	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.				
1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE 28.Apr.06	3. REPORT TYPE AND DATES COVERED MAJOR REPORT		
4. TITLE AND SUBTITLE POSTNATAL DEPRESSION PREVENTION THROUGH PRENATAL INTERVENTION: A LITERATURE REVIEW. CO-AUTHOR THERESA EVEREST.		5. FUNDING NUMBERS		
6. AUTHOR(S) CAPT NUTT BRITTANY S ,THERESA EVEREST.				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) UNIVERSITY OF COLORADO HSC		8. PERFORMING ORGANIZATION REPORT NUMBER CI04-1771		
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) THE DEPARTMENT OF THE AIR FORCE AFIT/CIA, BLDG 125 2950 P STREET WPAFB OH 45433		10. SPONSORING/MONITORING AGENCY REPORT NUMBER		
11. SUPPLEMENTARY NOTES				
12a. DISTRIBUTION AVAILABILITY STATEMENT Unlimited distribution In Accordance With AFI 35-205/AFIT Sup 1			12b. DISTRIBUTION CODE	
13. ABSTRACT (Maximum 200 words)				
DISTRIBUTION STATEMENT A Approved for Public Release Distribution Unlimited				
14. SUBJECT TERMS			15. NUMBER OF PAGES 10	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT	

**Postnatal Depression Prevention through Prenatal Intervention:
A Literature Review**

March 17, 2006

**Theresa Everest, LCDR, NC, USN, MSN, RN, C
Brittany Nutt, Cpt, NC, USAF, BSN, RN, C**

20060505147

Introduction

Depression during pregnancy is associated with "higher incidence of post-partum depression, maternal psychosocial and lifestyle risks, death by suicide, and adverse fetal outcomes" (Jesse and Graham, 2005). According to Orem's Self-Care Deficit Theory, (Serwatka, K. and Issel, M., 2000), women with significant depression during the prenatal period have decreased self-esteem, decreased self-care ability and decreased bonding with their infants after birth. In addition, these women are at highest risk to develop postpartum depression. Despite this knowledge, the prevalence rates of depression are high and prenatal depression (PND) may go unrecognized by the healthcare provider because the discomforts of pregnancy are similar to depressive symptoms and the number of depression screenings performed by health care providers is low. Anderson, Roux and Pruitt wrote in their study on prenatal depression and abuse that "too often the current model of care is don't ask, don't deal with it", (2002).

Three-quarters of pregnant women who are diagnosed with PND are not treated for the depression, while over 50% of women with depression are not identified or diagnosed (Bennett, H., Einarson, A., Taddio, A., Koen, G., and Einarson, T., 2004). Currently, prenatal depression has a prevalence rate of 20%, while postpartum depression affects 11% of previously pregnant women (Tychev et al., 2005). One of the goals of Healthy People 2010 is to reduce the rate of post-partum depression. One method to reach this goal is to prevent post-partum depression (PPD) by providing adequate risk assessment and treatment for depression during the prenatal period (Healthy People 2010, 16-6, 2000). The goal of this study is to assess the relationship between prenatal screening and postnatal depression outcomes in current practice and determine if adequate screening could reduce the percentage of women that suffer from PPD.

Method

By using the keywords, prenatal, pregnancy and depression, we performed a literature search for prenatal depression studies that were completed between 2000 and 2006. We searched the Cochrane pregnancy database, OVID database of peer reviewed journals, and hand searches of more than 15 journals. Review of the literature on prenatal depression confirmed that multiple studies have been accomplished on prenatal care and postpartum depression, however, the issue of prenatal depression is often overlooked and the majority of the studies reviewed through the literature search were focused on postnatal depression (Wickberg, Tjus, and Hwang, 2005). The authors of this study were able to identify 25 studies that involved pregnant women and were relevant for our research. Selection of literature for our study was completed based upon selection of published studies that were methodologically strong based on assessment of validity of the study, identified intervention aims for prenatal risk or pregnancy related depression, and were focused on the antepartum or prenatal period of pregnancy.

Literature Review

Sleath, West, Tudor, Perreira, King and Morrissey completed a study of pregnant women in North Carolina that implied that 13 – 51% of women have depressive symptoms during pregnancy (2005). The study recognized that the proportion of women who were identified varied due to the depression screening tool used and the demographics of the population studied. The study also acknowledged that a woman's ethnicity might influence the patient's attitude about depression and treatment options.

Zayas, Jankowski and McKee completed a longitudinal study to examine PND symptoms among low-income Latina women (2003). 53% of the Latina women in this study had moderate to severe PND. These authors concluded that maternal mental health status affects the pregnant woman's ability to achieve self-care or to adequately care for a newborn child. The authors found that even though pregnancy is seen as a positive life event by the subjects of the study, increased depression correlated to negative life events during pregnancy. The authors concluded that third-trimester assessment of all pregnant women should be done to evaluate for negative life events that may cause PND or cause existing PND to persist and continue into postpartum.

One study showed stronger PPD symptoms in adolescent black women who did not receive early antenatal care suggesting that adequate prenatal counseling (PNC) is an intervention for reducing PPD in women (Warner, 2003). Depressed mothers were twice as likely to have late entry to prenatal care. Utilizing the Center for Epidemiologic Studies Depression Scale (CESTS) score, the author suggested that depressed black women had a 25-30% increase in inadequate early prenatal care which leads to more adverse outcomes of the pregnancy as compared to depressed white women.

A study to determine the prevalence of prenatal depression among 97 active duty pregnant women identified that 24% of pregnant soldiers had screened positive for depression during their pregnancy. Of these women, 11% had suicidal ideation during their pregnancy (O'Boyle, Magann, Ricks, Doyle and Morrison, 2004). This study concluded that while active duty women had higher rate of prenatal depression than nonmilitary women, screening for depression is not a standard at many military health facilities. The researchers recommended that all military clinics offering obstetric services should routinely screen all of their patients with emphasis on detection and treatment of prenatal depression.

A literature review by Bonari, Pinto, Ahn, Einarson, Steiner and Koren on perinatal risks of untreated PND found that if untreated, PND carried substantial risks during the pregnancy including increased preterm birth, small for gestational age infants, spontaneous abortion, low Apgar scores and birth complications such as increased cesarean rates (2004). The authors continue to describe how untreated PND affects the woman's ability for self-care and avoid unhealthy behaviors such as smoking or alcohol use.

An evaluation of the Edinburgh Postnatal Depression Scale (EPDS) by Wickberg, Tjus and Hwang (2005) discussed how the scale, while an important tool, was only as reliable as the provider using it. If the provider was not sufficiently trained to identify and treat prenatal depression, or if the patient withheld information from the provider, the EPDS tool would not help to diagnose women with prenatal depression. The study also discussed how pregnant women with depression who were cared for providers that were familiar with depressive symptoms and treatment options had decreased symptoms. However, because the tool had not been validated to be used on pregnant women, the researchers were unsure of how well the tool actually captured or identified depression in pregnant women.

Beck (2001) performed a meta-analysis of 84 studies that most often used the EPDS to screen for depressive symptoms. The researcher was able to identify 13 significant predictors of PPD including PND, low self-esteem, low social support, marital

status and prenatal stressor anxiety and suggested using these predictors in the obstetric setting to screen for depression during pregnancy.

Austin (2003) completed a systematic review to determine the efficacy of interventions intended for at risk women. The author concluded there is very little evidence in the literature that would suggest that PND interventions lower the rates of PPD. Three out of four studies he reviewed used tools that were not validated and the study which used a validated tool showed no significance in preventing PPD. The researcher recommended that more studies that were realistic and large enough to show effect should be done. He recommended that these studies target depressive symptoms and utilize tools that could measure both the symptoms and syndromes of depression. Austin stressed that studies had to address the limitations of studying PND interventions before concluding that such interventions were not useful.

Prenatal care providers are the first line of detection for antenatal depressive disorders. According to researchers Smith, Rosenheck, Cavaleri, Howell, Poschman, and Yonkers (2004) in a study completed of 387 pregnant women, they found that 99 women screened positive for prenatal depression before their first prenatal visit, however only 2% of the study sample were identified by their prenatal healthcare provider as having depression. 12% of the women that the researchers had screened positive and were not identified by the healthcare provider also screened positive for suicidal ideation.

Results

The problem in dealing with PND is that there is not a prenatal specific screening tool to screen for PND. Some research studies have shown that postpartum depression screening tools are effective at diagnosing prenatal depression. Specifically, the Edinburgh Postnatal Depression Scale (Austin, 2004), the CESTS (Warner, 2003) and the Beck DI-II (Bennett, et al, 2004) have been used with some success while the Hospital Anxiety and Depression Scale (HADS) screening tool has been found to be inappropriate for prenatal use in screening for depression because it does not adequately assess the domains of depression in early pregnancy (Jomeen and Martin, 2004). The EPDS has been found to have a 68-86% sensitivity and 78-96% specificity when used in the primary care setting for screening of PND (Buist, Barnett, Milgrom, Pope, Condon, Ellwood, Boyce, Austin and Hayes, 2002) while the Beck DI-II has been found to have a 91% sensitivity and 52% specificity when use to screen for PND in the antenatal clinic (Jesse & Graham, 2005).

Routine screening in obstetrical settings for PND is not a standard of care in the United States. In 2002, the American College of Obstetricians and Gynecologists recommended that routine screening of prenatal patients be given utilizing the EPDS (O'Boyle, et al, 2005). The US Preventative Services Task Force recommended that the benefits of routine screening for PND far outweighed the risks of not diagnosing or treating women with PND or PPD (Buist, et al, 2002). The American Psychiatric Association identified that treatment of depression during pregnancy should be a priority for clinical guidelines for the prevention of PPD (Spinelli and Endicott, 2003) Screening of women during early pregnancy may identify poor prenatal outcomes such as preterm labor or small for gestational age infants. Screening that occurs during the third trimester may impact identification of women who are at risk for PPD. Austin (2003) found that interventions for PND does not reduce the rates of PPD, and Hayes and Muller (2004) suggest that educational intervention does not change the incidence of prenatal

depression levels however another study suggested that adequate prenatal care itself is an intervention that might reduce incidence of PPD (Warner, 2003).

Studies completed on prenatal depression have not been able to accurately predict how many pregnant women have had PND during their pregnancy (Gaynes, Gavin, Meltzer-Brody, Lohr, Swinson, Gartlehner, Brody, and Miller, 2005). Variables that are not accounted for by most screening tools create problems with the identification of PND. These variables include race and ethnicity, primiparous pregnancy, age, marital status or education levels. Identification of a woman who scores a false positive on a screening test may cause undue anxiety and bring about increased guilt or higher risk of adverse outcome. According to Bennett, et al, (2002) low to medium scores from the BDI-II should be interpreted with caution due to high incidence of false positives. Sleep deprivation, appetite changes and fatigue are often confused for depressive symptoms making accurate diagnosis of depression in pregnant women difficult.

An additional consideration is that screening tools may not be enough to help resolve depressive symptoms during pregnancy. Not all obstetrical settings use screening tools to screen for depression in their patients. Practitioners may need additional training on identification of depressive symptoms and incorporation of supportive methods to help patients reduce depressive symptoms (Wickberg, Tjus, and Hwang, 2005). Providers who do not have experience utilizing screening tools for PND may have higher false positive results due their inability to differentiate symptoms. Antenatal PND screening for PPD prevention excludes birth events which can change the results of prenatal screening significantly (Lumley and Austin, 2001).

Discussion

Predictors of PPD can be identified through routine prenatal screening for depression. Women with significant depression during the prenatal period have decreased self-esteem and self-care capability and increased adverse birth outcomes as shown by the results of the studies reviewed during our research. Decreased self-esteem has been shown to be one of the most significant predictors of PND and PPD. Depression detection by prenatal providers remains low unless the provider utilizes some type of screening tool with every prenatal patient. Over one quarter of pregnant women have depression symptoms yet very few women are consistently identified by their obstetric providers. Additionally, inadequate training in identifying PND and in using depression scales contributes to low rates of PND screening in the clinical setting. Depression scales utilized in clinical settings are only as good as the provider who is using it. Providers who received specialized training on how to use depression screening scales are more likely to correctly screen and intervene for PND.

Even with proper training in using depression scales, diagnosing PND is difficult as depressive symptoms are similar to normal symptoms of pregnancy and many depression scales have questionable reliability when applied to pregnant patients. Not all of the depression screening tools used in the studies reviewed have been tested for reliability and validity in the prenatal setting. The BDI-II was suggested to be very easy to administer since there are only two questions to ask, however low to moderate scores are associated with higher rates of false positives, so caution must be exercised when using the BDI-II to screen for PND in the obstetric setting. ACOG and two other studies recommended that the EPDS was a valid tool for measuring depression prenatally, yet another study recommended more research should be done to establish the validity of

using this tool in prenatal screening. Other researchers found that the HADS screening tool was inappropriate for prenatal use and the CESTS had not been validated for prenatal use.

Studies on PND and postpartum involvement or outcomes have conflicting results on whether intervention during pregnancy will have any affect on PPD. In the controlled trial by Spinelli and Endicott, the intervention of interpersonal treatment groups showed significant improvement in PND (2003). Research in the area of prenatal intervention is limited as PND has often been overlooked and much of the current literature is focused on PPD. Even so, rates of both prenatal and postpartum depression are high in women regardless of race or culture and it is crucial to screen all women (NA, 2000; O'Boyle et al., 2004; Warner et al., 2003; Zayas et al., 2003).

Conclusion

Risk assessment screening must become the responsibility of all healthcare providers. Regardless of socio-economic or demographic advantages, all pregnant women should be screened for prenatal depression risks and provided adequate interventions to help prevent postpartum depression. Many healthcare providers remain untrained in the use of depression screening tools and treatment of symptoms of depression. Adequate training of all healthcare providers who care for obstetrical patients should be ensured to make certain that patients with PND will receive adequate care and/or referrals for care. Unfortunately, healthcare providers can provide all the interventions and teaching they know, yet if the patient is not willing to divulge personal information regarding difficulty coping with or previous history of depression, intervention by the healthcare provider will be non-productive.

The authors of this study recommend prenatal depression screening for all pregnant patients regardless of the time they enter prenatal care. The scales that should be used for screening are either the BDI-II or the EPDS, and some type of formal training should be in place for providers to become familiar with using the screening tools. It is crucial that more research be done so that a reliable and valid prenatal depression screening tool is established. No matter when a patient starts prenatal care, if a provider is not screening for depression, treatment cannot be initiated.

References

- Anderson, C., Roux, G., and Pruitt, A. (2002). Prenatal depression, violence, substance use, and perception of support in pregnant middle-class women. *The Journal of Perinatal Education*, 11(1). 14-21
- Austin, M. (2003). Targeted group antenatal prevention of postpartum depression: a review. *Acta Psychiatrica Scandinavica*, 107(1). 244-250.
- Austin, M. (2004). Antenatal screening and early intervention for "perinatal" distress, depression and anxiety: where to from here? *Archives of Women's Mental Health*, 7(1). 1-6.
- Austin, M. and Lumley, J. (2003). Antenatal screening for postnatal depression: A systematic review. *Acta Psychiatrica Scandinavica*, 107(1). 10-17.
- Bennett, H., Einarson, A., Taddio, A., Koren, G., and Einarson, T., (2004). Depression during pregnancy: Overview of clinical factors. *Clinical Drug Investigation*, 24(3). 157-179.
- Beck, C. (2001). Predictors of postpartum depression. *Nursing Research*, 50(5). 275-285.
- Bick, D. (2003). Strategies to reduce postnatal psychological morbidity. *Discussions of Managed Health Outcomes*, 11(1). 11-20.
- Bonari, L., Pinto, N., Ahn, E., Einarson, A., Steiner, M., and Koren, G. (2004). Perinatal risks of untreated depression during pregnancy. *Canadian Journal of Psychiatry*, 49(11). 726-735.
- Buist, A., Barnett, B., Milgrom, J., Pope, S., Condon, J., Ellwood, D., Boyce, P., Austin, M., and Hayes, B. (2002). To screen or not to screen – that is the question in perinatal depression. *Medical Journal of Australia*, 177(7). 101-105.
- Foster, P. and Bennett, A. (2002). Dorothea E. Orem in *Theoretical Foundations of Nursing Practice: Custom Edition*. Boston, MA: Pearson Custom Publishing
- Hayes, B. and Muller, R. (2004) Antenatal depression: A randomized controlled trial in the emotional health of primiparous childbearing women. *Research and Theory for Nursing Practice*, 18(2/3). 165-183.
- Gaynes, B., Gavin, N., Meltzer-Brody, S., Lohr, K., Swinson, T., Gartlehner, G., Brody, S., and Miller, W. (2005). Perinatal depression: Prevalence, screening accuracy, and screening outcomes. *Agency for Healthcare Research and Quality*. Retrieved 17March2006 from www.ahrq.gov
- Jesse, D.E. & Graham, M. (2005). Are you often sad and depressed? Brief measures to

- identify women at risk for depression in pregnancy. *Journal of Maternal-Child Nursing*, 30(1), 40-45.
- Jomeen, J. and Martin, C. (2004). Is the hospital anxiety and depression scale (HADS) a reliable screening tool in early pregnancy? *Psychology and Health*, 19(6), 787-800.
- Logsdon, M., Birkimer, J., Simpson, T., and Looney, S. (2005). Postpartum depression and social support in adolescents. *Journal of Obstetric, Gynecologic and Neonatal Nursing*, 34(1), 46-54.
- Lumley, J. and Austin, M. (2001). What interventions may reduce postpartum depression. *Current Opinions in Obstetrics and Gynecology*, 13(6), 605-611.
- Marcus, S., Flynn, H., Blow, F., and Barry, K. (2003). Depressive symptoms among pregnant women screened in obstetric settings. *Journal of Women's Health*, 12(4), 373-380.
- Misri, S., Oberlander, T., Fairbrother, N., Carter, D., Ryan, D., Kuan, A., and Reebye, P. (2004). Relation between prenatal maternal mood and anxiety and neonatal health. *Canadian Journal of Psychiatry*, 49(10), 684-689.
- N.A. (2000). 16-6 Increase the proportion of pregnant women who receive early and adequate prenatal care. *Healthy People 2010*. Retrieved 17Mar2006 from <http://www.healthypeople.gov/default.htm>
- O'Boyle, A., Magann, E., Ricks, R., Doyle, M., and Morrison, J. (2004). Depression screening in the pregnant soldier wellness program. *Southern Medical Journal*, 98(4), 416-418.
- Serwatka, K. and Issel, M. (2000). Prenatal depression, self-care behaviors, and birth outcomes: A literature review. (Presentation). *American Public Health Association*. Retrieved 17March2006 from www.apha.confex.com/apha/128am/techprogram/paper_16129.htm
- Sleath, B., West, S., Tudor, G., Perreira, K., King, V., and Morrissey, J. (2005). Ethnicity and depression treatment preferences of pregnant women. *Journal of Psychosomatic Obstetrics and Gynecology*, 26(2), 135-140.
- Smith, M., Rosenheck, R., Cavaleri, M., Howell, H., Poschman, K., and Yonkers, K. (2004). Screening for and detection of depression, panic disorder, and PTSD in public-sector obstetric clinics. *Psychiatric Services*, 55(4), 407-414.
- Spinelli, M. and Endicott, J. (2003). Controlled clinical trial of interpersonal psychotherapy versus parenting education program for depressed women. *American Journal of Psychiatry*, 160(3), 555-562.

- Warner, G. (2003). The association between maternal depression and prenatal care adequacy. *Review of Black Political Economy*, 30(3). 39-53.
- Wickberg, B., Tjus, T., and Hwang, P. (2005). Using the EPDS in routine antenatal care in Sweden: A naturalistic study. *Journal of Reproductive and Infant Psychology*, 23(1). 33-41.
- Zayas, L., Jankowski, K., and McKee, M. (2003). Prenatal and postpartum depression among low-income Dominican and Puerto Rican women. *Hispanic Journal of Behavioral Sciences*, 25(3). 370-385.